REMARKS

This Amendment is in response to the Office Action dated February 2, 2006, in which claims 1 and 3-23 were rejected. With this Amendment, independent claims 1 and 14, and dependent claims 6 and 19 are amended. Claims 1 and 3-23, as amended, are presented for reconsideration and allowance.

As suggested in paragraph 3 of the Office Action, claims 1 and 14 have been amended to clarify the limitation "and having a magnetic saturation moment of greater than 2.4T". Claims 1 and 14 have also been amended to state that the nanoclusters have a size of about 1 nanometer to about 5 nanometers.

In paragraph 5 of the Office Action, claims 1 and 3-23 were rejected under 35 U.S.C. § 102(b) as anticipated by Yoshikawa et al. (U.S. Patent No. 6,132,892) as evidence by Ando et al. and Kong et al. In paragraph 6 of the Office Action, claims 1 and 3-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa et al., and further in view of Sun et al. and Rawlings et al. as evidence by Ando et al. and Kong et al.

Yoshikawa et al. does not disclose nanophase magnetic material incorporating nanoclusters of a first magnetic material containing approximately 200 to 800 atoms per nanocluster surrounded by a second magnetic material. To further emphasize the difference of the present invention from Yoshikawa, independent claims 1 and 14 have been amended to state that the nanoclusters have a size of about 1 nanometer to about 5 nanometers. The size of the nanoclusters is discussed in the specification at page 7, lines 13-20.

Yoshikawa describes a crystalline structure that has grains of a first phase material and graining of a second phase material. This is not the same as having a layer made up of nanoclusters of a first magnetic material surrounded by a second magnetic material, where the nanoclusters have a size of about 1 nanometer to about 5 nanometers. Yoshikawa's first phase material and second phase material each have grains which are larger than the nanoclusters specified in claims 1 and 14. Furthermore, Yoshikawa does not teach a nanocluster made up of a first magnetic material having approximately 200 to 800 atoms surrounded by a second magnetic

material. This coated structure of the nanocluster provides a surface effect which allows a magnetic saturation moment which is greater than the bulk material properties of the same magnetic materials.

Dependent claims 6 and 19 have also been amended to emphasize the difference between the present invention and Yoshikawa. In particular, claims 6 and 19 relate to nano-laminated cluster films, which are films formed by alternating layers of nanoclusters and layers of matrix material. As described in the specification, such as at page 11, lines 16-23, the nano-laminated cluster films have a thickness of about 5 nanometers to about 30 nanometers and are formed by alternating layers of coated nanoclusters and matrix material. The nano-laminated cluster films are typically made up of structure where the number of nanocluster layers and matrix layers is approximately between 2 and 15, as specified in dependent claim 11.

With the amendments to independent claims 1 and 14 and the amendments to dependent claims 6 and 19, claims 1 and 3-23 are in condition for allowance. Claims 1 and 3-23 define a new magnetic element which is neither taught nor suggested by Yoshikawa. The grains of Yoshikawa, which are part of a bulk material, produce a bulk material effect, not the unique magnetic properties produced by nanoclusters which are the subject of claims 1 and 3-23. There is no suggestion in Yoshikawa, or in any of the other cited references, of magnetic layers having a magnetic saturation moment of greater than 2.4T which are formed by nanoclusters of a first magnetic material containing approximately 200 to 800 atoms per nanocluster surrounded by a second material, where the nanoclusters have a size of about 1 nanometer to about 5 nanometers.

With this Amendment, claims 1 and 3-23 are in condition for allowance. Notice to that effect is requested.

Respectfully submitted,

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